

**In the drawings**

The attached sheets of drawings include changes to Figures 1A, 1B, 2A to 2C and corrected martins of Figures 7A to 9B. These sheets, which includes one sheet with Figures 1A and 1B, and another sheet with Figures 2A to 2C, replaces the original sheets including Figures 1A, 1B, and 2A to 2C. In Figures 1A, 1B, 2A to 2C, the text “(Prior Art)” has been added as a legend. These amendments to the drawings have been made only to comply with the Office Action at p. 2.

Attachment: (5) Replacement Sheets

(2) Annotated Sheets Showing Changes

**REMARKS/ARGUMENTS**

Claims 1-37 are pending in the present application. Claims 33-37 were previously withdrawn from consideration as drawn to a non-elected invention and claims 16-25 and 29 were previously withdrawn from consideration as drawn to a non-elected species. By virtue of this response, claims 1, 2, 4, 5, 30, and 31 have been amended. Accordingly, claims 1-15, 26-28, and 30-32 are currently under consideration. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented.

**Previously Filed Supplemental Information Disclosure Statement**

Applicants previously filed a Supplemental Information Disclosure Statement, along with a Form PTO-1449 including 4 references, on June 10, 2003. To date, the Form PTO-1449 has not been initialed and returned to our office (but we have received the return postcard). Applicants respectfully request that the Examiner initial and return the Form PTO-1449 indicating that the information has been considered and made of record.

**Amendment to the Drawings**

The Office has indicated that Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Proposed drawing corrections or corrected drawings are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

In response, Figures 1A, 1B, 2A-2C have been amended as suggested by the Examiner to include the legend "(Prior Art)". The amended figures are submitted herewith. Accordingly, Applicant respectfully requests the reconsideration and withdrawal of the objection to the drawings and entry of the amended figures.

**Rejection of Claims Under 35 U.S.C. 103(a)**

The Office has rejected claims 1 and 3 as allegedly being unpatentable over Bhagavatula (U.S. Pat. No. 5,768,450).

In support of the rejections of claims 1 and 3, the Office Action states at pages 5-6:

Regarding claims 1, 3, Bhagavatula teaches waveguide array structure (shown in at least fig. 8) comprising: at least a first waveguide having a first width and a first length (shown in fig. 8, item central waveguide of device 70 with relatively thick width and short length); and a second waveguide having a second width different from the first width and a second length different from the first length (shown in fig. 8, item bottom waveguide of device 70 with relatively narrow width and long length; see also col.5, line 54-col. 6, line 12; wherein the variation in optical path lengths are due to variation in optical waveguide lengths, see also the variation in lengths of waveguides for focusing beams similar to the structure of fig. 8 discussed in page 1, lines 26-36); wherein the first waveguide comprises an average width which is different from an average width of the second waveguide (shown in fig. 8, wherein the average widths  $a_1$ - $a_n$  increase from the bottom waveguide 76 to the top waveguide 76).

However, Bhagavatula does not specifically teach (A) wherein the above waveguide array structure is arrayed waveguide grating; . Although the examiner does not yield weight for the above preamble since it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951); nonetheless, Bhagavatula further states that grating curvature used for reflecting waveguides output beams provides output light focusing mechanism (col. 1, lines 26-30+). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to use Bhagavatula's waveguide structure in a conventional arrayed waveguide grating such as the AWG of prior art disclosed by the applicant for figure 1 of the specification in page 3, 3rd paragraph , since such structure uses multiplexers/demultiplexers to out optical signals according to their wavelengths (see col. 1, lines 6-9).

In response, claim 1 has been amended by incorporating features of dependent claim 2 to further recite an arrayed waveguide grating comprising “at least one input waveguide; and an input slab waveguide optically coupled to the input waveguide, wherein the arrayed waveguide grating is optically coupled to the input slab waveguide” in view of the Office Action at p. 3, which states “[c]laims 2, 7, 30-32 are allowable because the prior art, in combination with other limitations of the base claim, does not teach an input slab waveguide optically coupled to the input waveguide; the arrayed waveguide grating optically coupled to the input slab waveguide.”

Therefore, Applicant submits that independent claim 1 is patentable over Bhagavatula, either alone or in combination with any other reference. Dependent claim 3 depends from claim 1 and is patentable for at least the same reasons. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 1-3 under 35 U.S.C. 103(a).

**Allowable Subject Matter**

Applicant thanks the Examiner for the indication that claims 2, 4-15, 26-28 and 30-32 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In view of the remarks above, however, Applicant submits that all pending claims are patentable and respectfully requests allowance therefor.

**CONCLUSION**

Applicants have, by way of the amendments and remarks presented herein, made a sincere effort to overcome rejections and address all issues that were raised in the outstanding Office Action. Accordingly, reconsideration and allowance of the pending claims are respectfully requested. If it is determined that a telephone conversation would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant(s) petition(s) for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. (373722001600). However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: February 18, 2003

Respectfully submitted,

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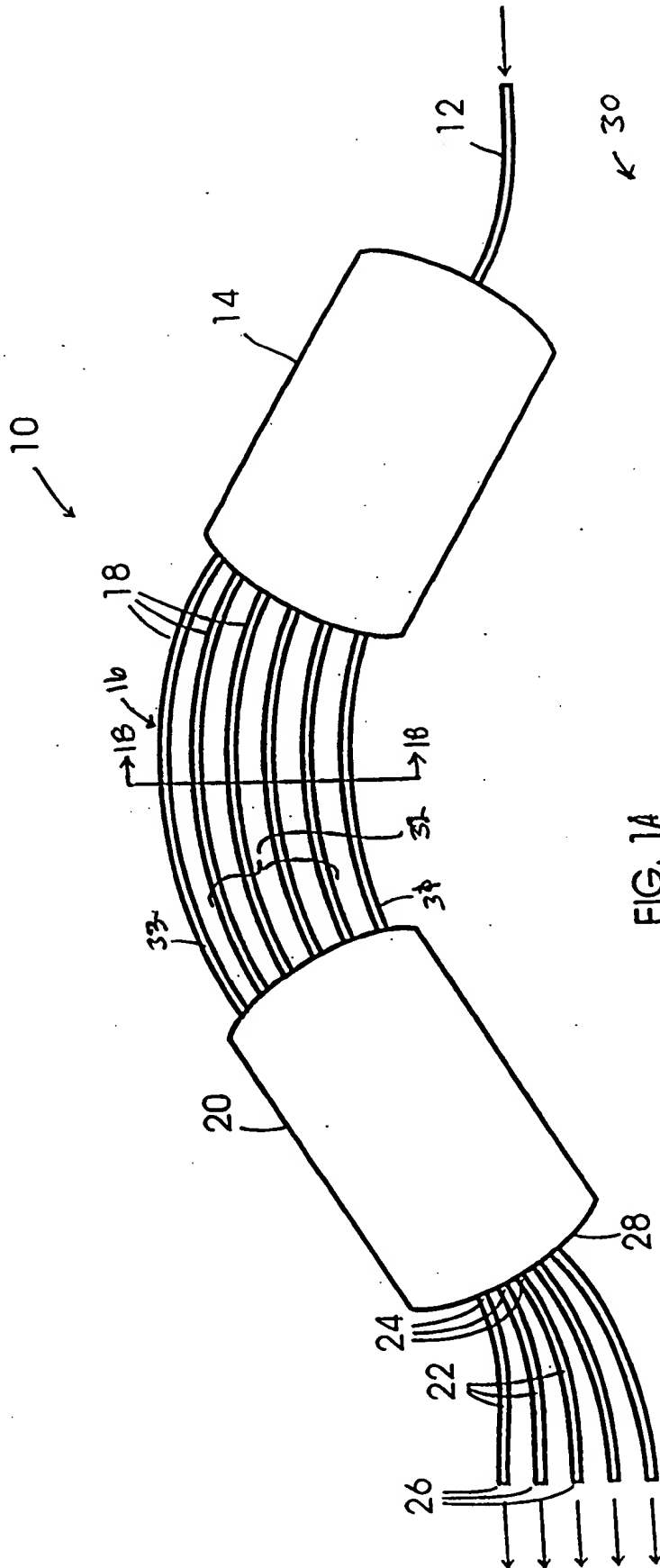


FIG. 1A  
 (PRIOR ART)

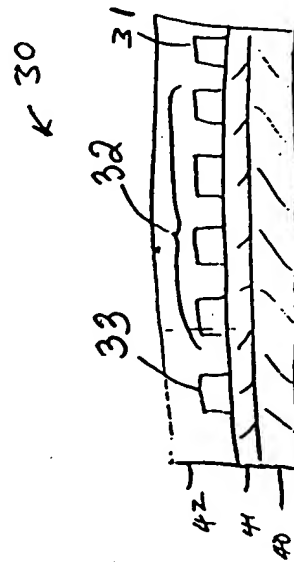


FIG 1B  
 (PRIOR ART)

